

CLAIMS

1. A circular blade device (1) for cutting flat marble, granite, glass or similar sheets (5), comprising numerical control means (2) for a cutting head (3) having a blade (14) addressable within a cutting volume, characterised by comprising means for manipulating said sheets within said cutting volume.

2. A device as claimed in claim 1, characterised in that the manipulating means comprise at least one manipulator member provided on a slider (13) controlled by the numerical control means (2) and addressable within the cutting volume, and movable above the sheet (5) being cut.

3. A device as claimed in claim 1, characterised in that the manipulating means for said sheets (5) comprise at least one manipulator member (12) associated with the cutting head (3), said manipulator member being arranged to cooperate with the sheet being cut.

4. A device as claimed in claim 2 or 3, characterised in that said manipulator members (12) comprise suckers.

5. A device as claimed in claim 2 or 3, characterised in that said manipulator members (12) comprise a part to be inserted into the cut in the sheet made by the blade (14) of the head (3), and to cooperate with a cut edge in order to move the sheet.

6. A device as claimed in claim 3, characterised in that said manipulator member (12) is the cutting blade (14), arranged to cooperate with the cut edge of the sheet to achieve its movement.

7. A device as claimed in claim 4 or 5, characterised in that said manipulator member is associated with actuator means (15) which enable it to move vertically.

8. A device as claimed in claim 7, characterised in that said
5 actuator means (15) are rigid with the cutting head (3).

9. A device as claimed in claim 7, characterised in that said actuator means (15) are of pneumatic type.

10. A device as claimed in claim 7, characterised in that the numerical control means (2) control said actuators.

10 11. A device as claimed in claim 4, characterised in that the suckers operate on the surface of the sheets.

12. A device as claimed in claim 1, characterised by presenting a cutting disc (65) disposed below the sheets (5) in such a manner as to operate on the lower face of the sheets (5).

15 13. A device as claimed in claim 12, characterised in that said cutting disc (56) is disposed to the side of a cutting support (6) on which said sheet (5) is rested during the cutting by the cutting head.

14. A device as claimed in claim 12, characterised in that said cutting disc (65) can be moved vertically by one or more actuators (66).

20 15. A device as claimed in claim 12, characterised in that said cutting disc (65) forms part of a milling machine (64) rigid both with a frame (63) mounted on vertical guides (62) and with an actuator (66) for vertically moving said disc (65).

16. A device as claimed in claim 15, characterised in that said
25 vertical guides (62) are fixed to a ledge (60) projecting from said support (6).

17. A device as claimed in claim 12, characterised in that said cutting disc (65) can be moved about a vertical axis of rotation to vary its cutting direction.

18. A method for cutting marble or glass sheets, characterised by
5 translationally moving the sheet until it is brought above a cutting disc (65), and making one or more grooves (70, 71) by a relative movement between the cutting disc (65) and the sheet (5).

AMENDED CLAIMS

[received by the International Bureau on 21 September 2004 (21.09.04);
original claims 1-18 replaced by new claims 1-12 (2 pages)]

1. A circular blade device (1) for cutting flat marble, granite, glass or similar sheets (5), comprising numerical control means (2) for a cutting head (3) having a blade (14) addressable within a cutting volume and comprising means for manipulating said sheets within said cutting volume, characterised in that the manipulating means for said sheets (5) comprise at least one manipulator member (12) extending from the cutting head (3), said manipulator member being arranged to cooperate with the sheet being cut and comprising suckers.
2. A device as claimed in claim 1, characterised in that said manipulator member is associated with actuator means (15) which enable it to move vertically.
3. A device as claimed in claim 2, characterised in that said actuator means (15) are rigid with the cutting head (3).
4. A device as claimed in claim 2 or 3, characterized in that said actuator means (15) are of pneumatic type.
5. A device as claimed in claim 2, characterised in that the numerical control means (2) control said actuators.
6. A device as claimed in claim 1, characterised in that the suckers operate on the surface of the sheets.
7. A device as claimed in claim 1, characterised by presenting a cutting disc (65) disposed below the sheets (5) in such a manner as to operate on the lower face of the sheets (5).
8. A device as claimed in claim 7, characterised in that said cutting disc (56) is disposed to the side of a cutting support (6) on which said sheet (5) is rested during the cutting by the cutting head.

9. A device as claimed in claim 7, characterised in that said cutting disc (65) can be moved vertically by one or more actuators (66).
10. A device as claimed in claim 7, characterised in that said cutting disc (65) forms part of a milling machine (64) rigid both with a frame (63) mounted on vertical guides (62) and with an actuator (66) for vertically moving said disc (65).
11. A device as claimed in claim 10, characterised in that said vertical guides (62) are fixed to a ledge (60) projecting from said support (6).
12. A device as claimed in claim 7, characterised in that said cutting disc (65) can be moved about a vertical axis of rotation to vary its cutting direction.